WRD

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SECRETARY

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COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
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December 8, 1995

John H. Hankinson, Jr.
Regional Administrator
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Hankinson:

I have enclosed the requested additional written clarification concerning the implementation of certain aspects of our nondegradation policy implementation methodology found in our new water quality standards regulation 401 KAR 5:030. Our comments are arranged in sequence to comments in your letter of November 13, 1995. We have determined that there were sixteen comments or questions that required a response.

If you have any additional questions or need further clarification, please contact Terry P. Anderson, Manager, Water Quality Branch, Division of Water. We hope that the enclosed response clarifies your concerns and that you can now approve our water quality standards revisions.

Sincerely,

Phillip J. Shepherd

PJS:dh

Enclosure

Fed Ex

Response to Comments - Region IV EPA
Letter of November 13, 1995

General Comments

1. **Under what circumstances would the limits listed for these substances be more stringent?**

As always, we have the authority to deny a discharge if the assimilative capacity of the stream is insufficient to accept the discharge. If the assimilative capacity is sufficient, then the most stringent limits that we impose will be required. These are basically tertiary limits for domestic wastes for CBOD, ammonia, D.O. and technically achievable limits for TP and TSS. Fecal coliform limits are based on Kentucky treatment requirements and the TRC limit is the chronic criteria for warmwater aquatic habitat protection. They are end-of-pipe limits and are to be met regardless of available dilution. The chronic WET limit could never be less than one TU_c.

2. **Please describe the opportunity for public input into this process.**

The public has the opportunity to provide comments on KPDES permitting decisions for high quality waters when the preliminary permit is public noticed. All new and expanded permitted discharges to these waters will be public noticed. The Division receives oral and written comments of the hearing, and publishes a response to these comments.

3. **It is our understanding that through the implementation of subsection 5(a)(6) of Section 1 of the implementing regulation, all other non-domestic discharges shall contain limits that are twice as stringent as those limits that would be required to meet applicable water quality criteria. Please provide us with your interpretation of this provision in writing if you find that all or a portion of the above interpretation is incorrect.**

This interpretation is correct. Another example would be that a discharge to a zero $7Q_{10}$ Tier II water containing a metal such as chromium VI would receive a limit of 5.5 ug/l instead of 11 ug/l.

4. **Also when lowering of water quality will occur in a Tier II water, please describe the process for determining important economic and social development.**

The process for determining under what circumstances economic and social development is important enough to allow a lowering of water quality has not been developed. The Cabinet and the review panel spent many hours discussing this process and came to no consensus. The Cabinet feels this is an important local decision that needs to be determined on a case by case basis. It is envisioned that procedures in 5(b) will

incorporate an economic and social importance evaluation by the very nature of the analyses. The less stringent level of treatment decision (if allowed) will have been made with this in mind.

5. **Please provide a description of the implementing authorities for NPS pollution in waters of the Commonwealth and any other supporting information.**

401 KAR5:030 does not govern NPS pollution. We rely largerly on a voluntary incentive based program to control NPS pollution and to conform to the policy statement. The Division of Water is responsible for overseeing the state nonpoint source pollution management program that is supported by federal funds. The Division works cooperatively with several agencies to implement the program. We have enclosed a copy of the management program for your information. The program is updated and some milestones have changed as the program adjusts to perceived needs. These program changes are done with Region IV concurrence. There are several mechanisms in the program to address implementation of cost effective BMPs in Tier II waters. We have included a copy of a 1994 State statute that created the Agricultural Water Quality Authority. The statute set in motion a process by which farmers and agencies (including the Division of Water) will work together in formulating a water quality plan to protect water resources in the state. The plan will be in place in July 1996 and must be implemented within five years. The Division will control pollution from agriculture (including silviculture) in Tier II waters through its involvement in the authority.

6. **Please provide the rationale used to select that approach (the designated approach) as being better suited for protection of Kentucky waters.**

The Commonwealth chose the designational approach because it was more reasonably and realistically implementable. A drawback to the parameter by parameter approach was lack of data on parameters in unmeasured streams. To use the parameter by parameter approach, it was our contention that it would take (at a minimum) two years of monthly data to determine the background concentration of any one parameter. A Tier II stream would then be one whose 85th percentile value for any one parameter was above the chronic water quality criterion for that parameter (using a metal as an example.) The use of an 85th chronic percentile value takes into account some variation in analytical variability and positively biases waters for inclusion. Acute exceedences would disqualify a water as Tier II. The gathering of this data would be both expensive and time-consuming and was met with great opposition by the regulated community because all permitting on streams that had no data would stop for two years until the data were collected. It also meant that some streams with selected data may have to have new data collected if a particular parameter had not been measured. The final result would in many cases result in a stream or segment being Tier II for some parameters and Tier I for others. Determining permit limits in such a situation would be too complex. An additional complication would be in determining what a lowering of water quality would

be for each parameter. One approach we considered was to define a lowering of water quality to be the load of a parameter that would result in 25 percent or more of the assimilative capacity being exceeded when using the $7Q_{10}$ flow for dilution (we also looked at using a 10 percent factor). Assimilative capacity was defined as the difference between the water quality criterion and the median in-stream value for that parameter as measured at a minimum frequency of once per month for a period of two years. Likely results of this approach would be to have some discharge parameters cause a lowering of water quality while others would not. Another problem was accounting for the incremental load changes based on additions or decreases in parameter contribution and the effect this would have on the assimilative capacity. An inventory of this for new and modified permits would have to be part of the permitting process. Meshing all of the above into a permit and implementation procedure became too complex in our judgement. The expected delay in permit issuance was further complicated by the probable need to change our fee schedule regulations if this revision was instituted. The Cabinet chose a more straight forward approach to categorizing Tier II waters by using a biological approach that also included waters recognized as unique in the State. Once a water is determined to be a Tier II water, each pollutant on the KPDES permit will be subjected to the strict antidegradation requirements, which go above and beyond our conservative water-quality based approach already in place for use protected waters. It is our best professional judgement that the procedure we adopted will protect Tier II waters and that it meets the intent of the federal antidegradation regulations found at 40 CFR 131.12 and our State nondegradation policy in 401 KAR 5:029 Section 2.

7. **We also ask that the Commonwealth provide a description of the classification/recategorization process for a potential Tier II waterbody with an existing discharge, where neither DEP nor the permittee has the time or resources to collect/conduct the necessary IBI data/survey apparently needed to classify this waterbody as high quality. Does the waterbody remain classified as Tier I (use protected) until additional resources or survey crews become available?**

Priority for DEP survey work is waterbodies that could potentially be Tier II waters for which there is a pending new permit or a request to expand or modify the discharge in an existing permit. In the cited example the waterbody would be low in priority and would remain classified as a Tier 1 water.

8. **The Cabinet's statement in the RIA for 401 KAR 5:026 that "the Division of Water will perform field assessments of waters with high quality potential and will determine all classifications based on its assessment or on petitions submitted by the public" is interpreted to mean that before the issuance of any new or expanded discharge permit, the Commonwealth will determine the appropriate antidegradation category (Tier I, II, or III) for each waterbody that is not presently listed in Section 3 of their regulation. Further it is our understanding that the Commonwealth can deny any permit to waters of the state. Is this interpretation correct?**

The statement in the RIA cannot be applied to 401 KAR5:030 since the revisions in 401 KAR 5:026 were withdrawn. With the adoption of 401 KAR 5:030, all waters not listed in Section 3 are categorized as use protected waters (Tier 1) and receive full protection for all appropriate uses. This means that applicable criteria for warmwater aquatic habitat use, primary and secondary contact recreation and domestic water supply (if applicable) apply to these waters.

As stated in the answer to question 7, the Cabinet will prioritize waters for field assessments based on their potential to be recategorized as Tier II waters to verify their status (as resources allow). The cabinet has the statutory authority to deny permits to waters of the state.

Section 1

9. **Page 2, Subsection (5). We assume that the Commonwealth has determined that the resulting degradation due to the 10/5/1 limits will be insignificant. Has the Commonwealth projected discharge scenarios to confirm the level of degradation under these effluent limits? Please provide a written description of this procedure or an example of its use to assist in our review.**

The assumption is correct. Significant degradation is assumed to not occur if the limits in Section 1(5) a are met. Your statement referred to limits of 10/5/1 which are in error; you may have meant 10(CBOD)/2(NH_3-N)/7(D.O). These are limits we commonly give for streams with zero $7Q_{10}$ flows. This applies to all streams, so those with a positive $7Q_{10}$ would not get any dilution credit for these parameters. This results in more stringent limits and is considered to not lower water quality. This is a policy decision on the issue of insignificant degradation. The chronic WET limits will discourage discharges to zero $7Q_{10}$ streams and other streams with very little available dilution.

10. **Page 2, Subsection 5(a)3. Further, we understand that the Commonwealth does not presently issue general permits for stormwater discharges into Tier II waters. Please provide a written description of how the Commonwealth determines what constitutes insignificant degradation to Tier II waters due to a stormwater discharge or discharges or an example of this process to assist in our review.**

The Cabinet can issue general permits for stormwater discharges into Tier II waters. These are issued depending upon the facility category. A decision to issue a general permit means that we have determined that the discharge from that type of facility would cause insignificant degradation. An example would be a warehouse where products are stored inside, compared to a bulk chemical storage facility. The latter facility would receive an individual permit with end-of-pipe technology or water quality based limits.

11. **To what degree was the Commonwealth's approach in using the $7Q_{10}$ flow as the design instream flow for stormwater discharges used as a basis for this decision?**

11. **To what degree was the Commonwealth's approach in using the $7Q_{10}$ flow as the design instream flow for stormwater discharges used as a basis for this decision?**

The $7Q_{10}$ flow was not used in this decision. The limits as discussed above are set as end-of-pipe limits which means pollutants are mixed with rainwater and measured prior to mixing in the receiving water. The end-of-pipe limit concept developed from our inability to forecast receiving stream concentrations under varying flows and rainfall frequencies and intensities.

12. **Page 2, Subsection (5)(a)5. Sixteen carcinogenic pollutants have both human health and aquatic life based criteria. For example, toxaphene has a human health criteria for water and organism consumption of 0.00073 ug/l and a chronic aquatic life criterion of 0.0002 ug/l. We interpret this provision to apply only to the 0.00073 ug/l human health criterion, and that the aquatic life criterion of 0.0002 ug/l is controlled by subsection (5)(a)6 which when applied allows one-half of the use protected limit or 0.0002/2=0.0001 ug/l toxaphene (assuming no dilution or zero flow).....Does this example illustrate how the Commonwealth will implement antidegradation for these pollutant?**

Yes, the interpretation is correct.

13. **Page 2, Subsection (5)(a)6. The phrase "all other waste discharges" is considered to mean any parameter in either a domestic or nondomestic permit not specifically addressed in subsections 1 through 5. Please confirm that this interpretation is correct.**

We confirm that the above interpretation is correct.

14. **Page 3, Subsection (5)(b)2. When the degradation from a domestic discharge to a Tier II water is not necessary for important social and economic development, as specified in 40 CFR Section 131.12 (a)(2) and 401 KAR 5:029, Section 2, can the Commonwealth deny the application for the discharge and prohibit degradation.**

Yes, the Commonwealth can deny the application if the degradation is not necessary for important social and economic development.

Section 2

15. **Page 4, Subsection (3). Please specify the method or procedure for establishing effluent limits for proposed discharges to these waters between the time of designation as Kentucky Wild Rivers or the time included in the Reference Reach Network.**

Kentucky Wild Rivers are designated by an act of the Kentucky legislature. They automatically become Tier II waters and are not subject to public review as part of the

triennial review process. Effluent limits for a proposed discharger to such a water before designation would be those required for a Tier 1 water. However, there would be strong public and cabinet discouragement of proposals to discharge into candidate waters. Streams to be added to the Reference Reach Network would have proposed effluent limits for Tier II waters. The procedure for this action is found in 401 KAR 5:030 Section 2. The decision to add a stream with a proposed discharge to the Reference Reach Network would be public noticed and open for public comment at the same time that the permit is open for public comment. The stream would be added to the list of Tier II waters for promulgation in the next triennial review period.

16. **Section 3 Page 5, Subsection (2) we understand that when it is determined by the Commonwealth that threatened or endangered species exist in a water of the Commonwealth, that the water is designated as an Outstanding Resource Water, but not necessarily designated as a Tier II water. Thus, the list of Tier II waters in 401 KAR 5:030 is a subset of the list in 401 KAR 5:026. Please provide any additional written clarification on this issue if necessary.**

It is true that the Outstanding Resource Waters (ORWs) listed as Tier II waters in 401 KAR5:030 are a subset of the ORWs listed in 401 KAR5:026. This was done because streams with threatened or endangered species are not necessarily high quality streams. Two good examples of such streams are the Ohio River and the lower Tennessee River near Calvert City. Both rivers receive industrial and municipal discharges and have been regulated as use protected (Tier 1) waters for years with special provisions to protect the endangered mussels that inhabit specific areas. 401 KAR 5:031 has provisions to ensure their protection. The majority of streams listed in 401 KAR 5:030 are reference reach streams and do not appear in 401 KAR5:026.

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October 20, 1995

John Hankinson, Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Mr. Hankinson:

Kentucky submitted its revised water quality standards for U.S. EPA review and approval on August 11, 1995. That revision consisted of a new regulation, 401 KAR 5:030, which was a nondegradation policy implementation methodology.

I want to state for the record that the cabinet, in reviewing the other regulations that constitute the water quality standards, conducted a review of the use attainability analysis for Paddy's Run. Paddy's Run is listed in 401 KAR 5:026 as meeting primary and secondary contact uses. No new information was available indicating that uses other than those listed are now attainable. Consequently, the listed uses were retained.

Sincerely,

for Jack A. Wilson, Director
Division of Water

JAW:TPA:dh